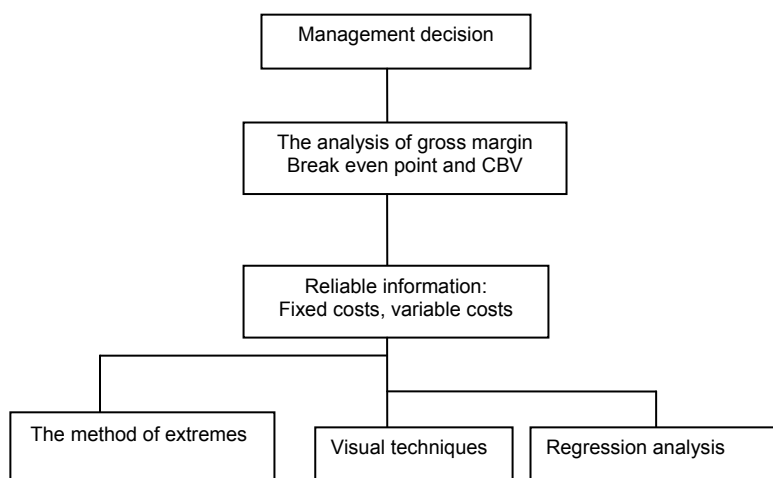


## THE ANALYSIS OF COST-PROFIT-VOLUME IN MAKING A DECISION ABOUT THE VOLUME OF ACTIVITY OF A COMPANY

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Company value maximization, the main objective of the financial function, materialized in the growth of the net assets (Total assets- debts) and in the appreciation of the company's capacity to make profit. As the efficiency of the financial management is based on the financial results and the obtained profit, a high importance for the company's activity is the establishment of the minimum limit for the volume of activity, of whose unfulfilment would draw loss. Because in a market economy the

producer can't influence neither the prices of the factors of production, nor the prices of the goods and services he sells, but the only element where he can act is the volume of activity until a settled level, known as break even point, where the company is facing with loss. Beyond the point when the sum of incomes is equal to the sum of expenditures, the company gets profit. Schematically, the steps taken in adopting the management decision can be summarized like this:



- Gross gain = Operating income – variable expenditures
- CBV= cost- benefit- volume

The size of the profit depends on the structure of operating expense and the level of fixed expenditures that the company has to cover. There is a relationship between costs, volume of

activity and profit that managers must know to fix their objectives of sales.

Knowing the structure of costs is very important in determining the break even point: fixed costs (of structure) and variable costs( operational).

**Fixed costs** are independent of the volume of production or sales. But these are not invariably, the modification

of the activity leads to the modification of the fixed costs that will be the same for a long period of activity, developing a constant evolution on levels. That is why the fixed costs don't react on the volume, but generally depend on time. That is why they are called costs of period, as they are related to time. This is the case of rent spending, insurance premium, and subscriptions laid in monthly or annual fixed amounts. Fixed costs are being registered even when the volume of activity is zero: rent and other periodical expenditures must be paid even if the company is not selling anything. Some fixed costs can not depend on time, their amounts is settled discretionary by the leadership. It is about the publicity expenditures whose amount is established by the managers, but in adopting the decisions, they must take in consideration many factors, as the competition level, innovation, producer's prestige, etc.

Fixed costs include:

- the depreciation of fixed assets;
- the rent for hired fixed assets;
- expenses related to administration staff;
- insurance premium;
- other local taxes and duties (tax on buildings, land tax, tax for cars and vehicles);
- storage costs.

**Variable costs** are expenditures that vary directly proportional with the volume of production, but the extensive growth of the volume of production (using the staff after program or in free days is being paid with additional charges) or by intensifying the use of equipment (the costs with fuel and energy raise) can result as emphasized growth of this type of expenditures. Also, as an example, in the case of products that use agricultural raw materials, the prices can raise more

after a low harvest influenced by an unfavorable meteorological situation, or the passing, by ecological meanings, recyclable packaging, whose price is different.

Variable costs include:

- raw material consumption;
- consumption of direct manual labour (direct salaries);
- sales commission.

The break even point is calculated on a spreadsheet, using fixed costs, variable costs, total costs, total incomes and profit or loss for the growth of the physical volume of production, using graphics or graphic formulas starting with the fact that, in this point, the total expenditures (CT) are equal to the total incomes (VT).

Marked with:

-  $Q_o$  = critical production or break even point

- P = unit price (VT =  $Q_o \cdot p$ )

- CF = fixed expenditures

- Cv = fixed unit expenditures

- CV = fixed total expenditures (CV =  $Q_o \cdot cv$ )

- CT = CF + CV

So:

$$Q_o \cdot p = CF + Q_o \cdot cv \quad \text{or}$$

$$Q_o \cdot p - Q_o \cdot cv - CF = 0$$

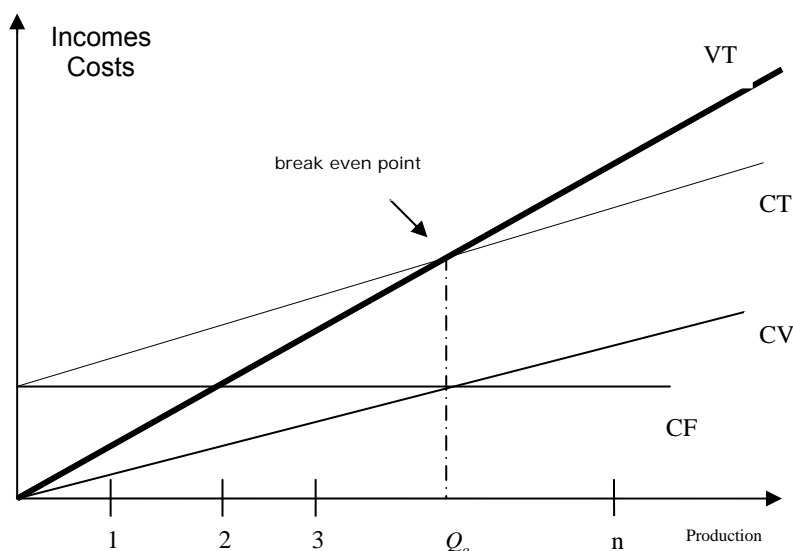
$$Q_o (p - cv) - CF = 0$$

$$Q_o = \frac{CF}{p - cv}$$

When:

p - cv = gross unit margin

The graphic representation of break even point:



This way of determining the break even point is made according to the volume of production, in case of linear evolution of the prices and variable costs.

The analysis of the breaking point is useful and highly used, but like any other technique, it can give wrong results if it is not used correctly. The quality of the results depends on the used information's reliability and on the accuracy of information concerning the prices for sales, fixed and variable costs.

If the desired information is the volume of activity ( $Q$ ), which should bring an established volume of profit ( $P$ ), then:

$$Q = \frac{CF + P}{p - cv}$$

If the total fixed costs do not react to the variation of the volume of production, the fixed unit costs (per product) will drop as the volume of product on which will be distributed raises. On the contrary, the total variable costs rise once the volume of production will grow, but the variable unit costs are independent, so they maintain constant. As a consequence of the different evolution of these two components, the total unit cost drops once the volume of production grows, because when the

total unit costs decrease progressively, the variable unit costs are constant.

This relationship between volume-cost is known as **economies of scale**. When the unit costs drop and the unit price is kept constant, the profit per unit of product is growing progressively, proportional with the volume of production. So, the economy of scale is explained by a unit profit that rises gradually, as the volume of production grows. This economy of scale is also known, economically speaking, as **the cost of leverage**.

This effect of leverage can have an important consequence depending on the size of the company in some business sectors. If the economies of scale are important, then, as a company is bigger and produce more, as the unit profit will be higher. The biggest companies will be the ones who produce at the lowest cost on the market from the pointed sector of activity, determining the competition's bankruptcy by reducing the unit prices for sales.

This problem has two aspects. First, it is created a natural selection, meaning that the strongest will survive and the clients will pay the lowest price on market. On the other hand, the company which has eliminated the competition would be in a monopoly

situation and would have the chance to raise the prices as a consequence of the absence of competition. In this situation, which are the real losers: the bankrupt companies or the clients of that sector of activity?

There are analyzed different ways of economic politics, in which the national and international legislation of the competition are called to bring in some answers.

On the national plan, if the elimination of the competition is a result of competitiveness, producing equality and with low costs, in the future there must be followed that the left ones should not acquire abnormally profits in relation to the normal breaking even point. But the elimination of the internal competition can be realized by an aggressive strategy of prices reduction making the competition to act in the same way. The loss accumulated by the competitive sales must be proved. In this case, the arbitral tribunals from USA verify the notification of unfaithful competition if the sales prices used by the aggressor are

inferior to the variable costs. There is known that the gross margin and variable expenses margin, a difference between turnover (the prices of sales) and total variable expenditures must cover a fixed expenditures and allow the gaining of profit. If the price is inferior to the variable costs, the margin is negative, the company couldn't cover the fixed costs and also being in loss. The purpose is eliminating the unfaithful competition. The sales in loss must be used repetitively as a commercial strategy. It is used frequently for the balances liquidation of seasonal products, when low prices are used, sometimes with 50% or 75% to attract clients.

Most frequently, the aggressor is a foreign company. When the inferior unit prices are used by a foreign company, to approve dumping, there must be checked if the prices on the foreign market are lower than those on the national market. The remedy is using some high enough duties to align the prices on the national market and on the foreign market too.

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